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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,499

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Kazuo Tagawa

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP

901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

VASISTH, VISHAL V

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

07/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,499	Applicant(s) TAGAWA ET AL.	
	Examiner VISHAL VASISTH	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicants' response filed on 5/19/2010 amended independent claims 1-2 and 4 and added new, independent claims 9-10 and new dependent claims 5-8. Applicants' amendments overcame the 35 USC 103 rejection over Muraki in view of Osumi from the office action mailed on 2/4/2010 and therefore this rejection is withdrawn. For reasons discussed below, neither applicants' amendments nor arguments overcome the 35 USC 103 rejections over Shimomura in view of Kawahara and Osumi in view of Schnur.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 3, 5, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimomura et al, US Patent No. 6,231,782 (hereinafter referred to as

Shimomura) in view of Kawahara et al., US Patent No. 6,667,285 (hereinafter referred to as Kawahara).

Shimomura discloses a refrigerator oil composition comprising, a hydrocarbon oil, an alicyclic polycarboxylic acid ester compound as a base oil component, a sulfur compound such as 1.0 to 10 mass% of a phosphorothionate (as recited in claim 1) (Col. 12/L. 7-20 and 33-47), 1.0 mass% of a phosphorus compound (as recited in claims 1 and 5) (Col. 2/L. 32-34 and Table 3), 0.2 mass% of an epoxy compound such as a alkylglycidyl ester epoxy compound (as recited in claims 1 and 5) (see Abstract and Col. 10/L. 28 and Table 3) and a hydrofluorocarbon refrigerant (as recited in claim 1) (Col. 2/L. 5-7 and Col. 13/L. 56-63).

Also, the claim as written merely recites an intended use and case law holds that a recitation of the intended use of the claimed invention must result in a compositional difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art composition is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

As discussed above Shimomura discloses an ester base oil component (Col. 2/L. 14-24 and Col. 5/L. 36) but does not explicitly disclose a polyol ester as a base oil.

Kawahara discloses a lubricating oil composition for refrigerators comprising a mixture of at least one aliphatic saturated branched-chain carboxylic monoalkyl ester and fatty acid polyol esters which include esters of C_{1 to 10} polyhydric alcohol having 2 to 6 hydroxyl groups and fatty acids including n-pentanoic acid, n-heptanoic acid and

3,5,5-trimethylhexanoic acid wherein the fatty acids may be used alone or in combination (polyol ester of instant claims 1 and 7) (Col. 3/L. 30-35 and Col. 17-18/L. 24-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the refrigerant composition of Shimomura with the base oil mixture of Kawahara in order to enhance the hydrolytic stability and decrease the viscosity of the composition (Col. 3/L. 23-25 of Kawahara).

Claim Rejections - 35 USC § 103

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osumi et al., US Patent No. 2002/0123436 (hereinafter referred to as Osumi) in view of Schnur et al., US Patent No. 5,820,777 (hereinafter referred to as Schnur).

Osumi discloses a refrigerating machine oil which can be used for refrigerating machines such as packaged air conditioning systems (as recited in claim 2) (Para. [0084]) comprising, a polyol ester as a base oil including a polyol or diol and fatty acids including pentanoic acid, heptanoic acid and 3,5,5-trimethylhexanoic acid (as recited in claims 1 and 7-8) (Para. [0010] and [0015]-[0018]), 0.1 mass % of a phosphorus additive (as recited in claims 1-2 and 5-6) (Para. [0052]-[0053] and Table 1) 0.1 to 5.0 mass% of an epoxy compound (as recited in claim 1-2 and 5-6) (Para. [0059]-[0060] and Para. [0070]) and refrigerants such as carbon dioxide or a mixture of carbon dioxide and hydrofluorocarbons (as recited in claims 1-2) (Para. [0078]-[0079]).

Osumi further discloses that the base oil for the refrigerant machine composition can be a mixture of esters made from at least two kinds of esters having different

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structures. Amongst the structures preferred are diesters of neopentyl glycol and a fatty acid and tetraesters of pentaerythritol and a fatty acid (as recited in claim 2) (Para. [0024]-[0027]). It is the position of the examiner that based on the disclosure of Osumi that one of ordinary skill in the art at the time of the invention would immediately envisage using the fatty acids recited in the instant claims for both complex ester base oils with a reasonable expectation of success.

Also, the claims as written merely recites an intended use and case law holds that a recitation of the intended use of the claimed invention must result in a compositional difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art composition is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Osumi discloses sulfur-containing antiwear agents but does not explicitly disclose the use of phosphorothionates.

Schnur discloses blended polyol ester lubricants for refrigerants comprising polyol ester basestock and effective amounts of additives which include 0.5 to 2.0 wt% of phosphorothionates (Col. 10/L. 26-40 and Col. 9/L. 29-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osumi with the additive of Schnur in order to enhance the antiwear and extreme pressure properties of the composition.

Response to Arguments

6. Applicants' arguments filed on 12/8/2009 with respect to claims 1-4 have been considered and are not persuasive.

Applicants argue that Shimomura teaches away from the use of polyol ester base oils in refrigerant lubricants by pointing to Tables 6 and 7 and specifically comparative examples 16 and 18 of Shimomura wherein complex polyol ester base oils are used as comparative examples to show inferior properties. This argument is not persuasive. When looking at the tables as a whole it is evident that the tables are comparing the mixture of hydrocarbon and ester oils as the inventive oils of Shimomura versus complex polyol ester oils used without any other base oils or simply the ester oils, wherein the mixture of hydrocarbon and ester oils has superior properties. This is not teaching away from the use of complex polyol ester oils but more of an indication that a mixture of hydrocarbon and ester oils is superior to polyol ester and/or polyol ester and polycarboxylic acid ester oils. Also, comparative examples 16 and 18 do not comprise any additional additives. The additives disclosed in the example oils of Shimomura contribute to many of the enhanced properties in the example oil compositions as is recited in columns 27-29 of Shimomura. Therefore, the argument that there would be no reasonable expectation of success in modifying Shimomura with the polyol ester base oil of Kawahara is not persuasive.

Applicants also argue that Kawahara does not teach or suggest that polyol esters improve hydrolytic stability and that the aliphatic branched-chain carboxylic acid monoalkyl ester components are responsible for the improved hydrolytic stability. This

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argument is not persuasive. Kawahara clearly states in column 3, lines 16-25 that component (I) the aliphatic saturated branched-chain carboxylic monoalkyl esters achieve excellent advantages when used in COMBINATION with (II) a fatty acid polyol ester lubricating oil including improved hydrolytic stability and lowered viscosity and therefore the combination of base oils is used in the composition of Kawahara. Thus, Kawahara does provide motivation to combine the references.

Applicants further allege unexpected results and provide data in the specification that allegedly supports the applicants' position. However, the data submitted is not commensurate with the scope of the claims. For example, the inventive oils 1-6 from Table 1 of the instant specification discloses very specific concentrations for the base oils in examples 1-6, which is not recited as limitations in instant claims 1-2. The same can be said regarding the phosphorothionate which is specifically recited as triphenyl phosphorothionate and is present in a very narrow concentration in the example oils of Table 1, the phosphorus-based additive, the glycidyl ester epoxy compound and the hydrofluorocarbon refrigerant used in the example oils of Table 7. The additives of instant claims are very broad and concentrations of these additives are not recited in the instant claims. The example oils of the tables in the specification use specific additives at very narrow concentration ranges. Therefore unexpected results have not been demonstrated for the entire scope of the claims. It should be evident that the analysis that was applied to claims 1-2 were also applied to claims 3-4 and now claims 9-10.

Furthermore applicants have not compared their example oils to the closest prior art which in this case is Shimomura, Kawahara and Osumi.

Conclusion

7. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL VASISTH whose telephone number is (571)270-3716. The examiner can normally be reached on M-R 8:30a-5:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VVV

/Ellen M McAvoy/
Primary Examiner, Art Unit 1797